

14 RESIDUAL EFFECTS AND MITIGATION

Introduction

14.1 This chapter summarises the mitigation and enhancement measures identified in the technical chapters for the proposed development and provides a summary of likely potential residual significant effects.

Mitigation and Enhancement

14.2 As set out in Chapter 2: EIA Process and Methodology of this ES, one of the main aims of EIA is to develop measures to avoid, offset or reduce the potentially significant adverse effects of a project and to enhance any beneficial effects.

14.3 Within each of the technical assessments (Chapters 6 – 12 and Volume 2), a number of mitigation measures have been identified to avoid or minimise those potential effects deemed significant and adverse. In addition, opportunities for compensation by environmental enhancement have been explored where practicable.

14.4 This section presents a summary of the mitigation measures to be incorporated during implementation of the proposed development. Reference should be made to individual chapters of the ES for more detail. The proposed mitigation and enhancement is in addition to the design input which has already been considered within the technical assessments.

14.5 Table 14.1 presents a summary of the mitigation and enhancement measures categorised under the following stages of implementation:

- Demolition and Construction; and
- Completed Development.

14.6 The principal contractor(s) will be responsible for implementing the Construction Environmental Management Plan (CEMP) during construction works. This is to ensure that construction activities are undertaken in such a way so as to minimise potential environmental impacts as proposed by the construction phase mitigation measures set out in this ES. The CEMP can also provide a useful tool by which the construction works can be readily audited by the RBG to ensure the construction works comply with planning requirements and meet the environmental commitments set out in this ES.

14.7 It is expected that the following mitigation measures listed will be secured by means of appropriately worded planning conditions.

Table 14.1: Summary of Proposed Mitigation and Enhancement	
Topic	Proposed Mitigation and Enhancements
Demolition and Construction	
Socio-Economics	<p><u>Maximising Local Recruitment</u></p> <p>To maximise local recruitment, mitigation measures would include commitment to advertise job vacancies in local job agencies and newspapers in accordance with 'local and relevant postcodes' to maximise those employed locally.</p>
	<p><u>Promoting Skills Training</u></p> <p>In addition to the benefit of direct employment of up to 150 employees from the local and sub-regional area, there will also be those who will benefit from skills training, resident employment opportunities and secondary effects. In addition to the generation of up to 35 net construction employment opportunities for the RBG, the Applicant can also seek to</p>

Table 14.1: Summary of Proposed Mitigation and Enhancement	
	<p>promote skills training. The contractor will be required to work with local education and training centres, and industry bodies, to provide apprenticeships and training opportunities, particularly for those in the NEET category (not in employment, education or training).</p>
Transport	<p><u>Environmental Management Plan (EMP) and Construction Logistics Plan (CLP)</u></p> <p>The construction vehicles would be managed in accordance with a CLP and an EMP. These documents would be agreed with the RBG prior to the commencement of works.</p> <p>Other potential effects as a result of construction would be on road surfaces from mud and dirt, as well as temporary footway closures which if and when required, would also be actively managed in accordance with measures set out in the EMP and the CLP. The measures are summarised as follows:</p> <ul style="list-style-type: none"> • Restricted hours of work; • Demolition and construction method statements; • Considerate Constructors Scheme; • Management of deliveries and trade contractors; • Management of noise vibration and dust; • Management of construction waste; and • CDM regulations.
Air Quality	<p><u>Dust Control</u></p> <p>The following mitigation measures from the IAQM Guidance on the assessment of dust from demolition and construction should be implemented:</p> <ul style="list-style-type: none"> • Monitoring <ul style="list-style-type: none"> – Undertake daily on and off site visual inspections where there are nearby receptors. – Carry out regular inspections to ensure compliance with the DMP and record results in the site log book. – Increase the frequency of inspections during activities with a high potential to create dust or in prolonged dry weather. – Consider installing dust monitoring equipment at the site boundary to determine if incorporated mitigation measures are sufficient to manage dust emissions. • Preparing and Maintaining the Site <ul style="list-style-type: none"> – Plan site layout to locate dust generating activities as far as possible from receptors. – Use solid screens around dusty activities and around stockpiles. – Avoid site runoff of water and mud. – Keep site fencing barriers and scaffolding clean using wet methods. – Remove dusty materials from site as soon as possible. Minimise emissions from stockpiles by covering, seeding, fencing or damping down. – Remove materials that have a potential to produce dust from the site as soon as possible, or cover if they are being reused on site. – Enforce an on-site speed limit of 15mph on surfaced roads and 10mph on unsurfaced areas. • Operations <ul style="list-style-type: none"> – Cutting, grinding or sawing equipment only to be used with suitable dust suppression equipment or techniques. – Ensure adequate water supply for effective dust and particulate matter suppression. – Use enclosed chutes, conveyors and covered skips.

Table 14.1: Summary of Proposed Mitigation and Enhancement	
	<ul style="list-style-type: none"> - Minimise drop heights of materials. - Ensure suitable cleaning material is available at all times to clean up spills. • Measures Specific to Earthworks <ul style="list-style-type: none"> - Re-vegetate earthworks and exposed areas/soil stockpiles as soon as practicable. - Use hessian, mulch or trackifiers where it is not possible to re-vegetate or cover with topsoil. - Only expose small areas of ground or stockpile when working. • Measures Specific to Construction <ul style="list-style-type: none"> - Ensure aggregates are stored in bunded areas and are not allowed to dry out. - Avoid concrete scabbling where possible. - Ensure bulk cement and other fine powder is delivered in tankers and stored in silos with suitable emission control. - Smaller supplies of fine powder material to be in sealed containers and stored appropriately. • Measures Specific to Trackout <ul style="list-style-type: none"> - Use water-assisted dust sweepers to clean access and local roads. - Avoid dry sweeping of large areas. - Ensure vehicles entering and leaving the site are appropriately covered. - Implement a wheel washing system.
Noise and Vibration	<p><u>Standard Best Practice Measures</u></p> <p>In addition to the site hoarding included as part of the main assessment, a range of good site practices will also be adopted by the contractor in order to further mitigate construction phase noise and vibration. The contractor would follow best practicable means to reduce the noise and vibration impact on the local community further, including:</p> <ul style="list-style-type: none"> • Fixed and semi-fixed ancillary plant such as generators, compressors etc. which can be located away from receptors and positioned so as to cause minimum noise disturbance. If necessary, acoustic barriers or enclosures can be provided for specific items of fixed plant; • Plant used on site to comply with the EC Directive on Noise Emissions for Outdoor Equipment (2000/14/EC), where applicable; • Selection of inherently quiet plant where appropriate. All major compressors to be 'sound reduced' models fitted with properly lined and sealed acoustic covers which are kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools to be fitted with mufflers or silencers of the type recommended by the manufacturers; • All plant used on site will be regularly maintained, paying particular attention to the integrity of silencers and acoustic enclosures; • Machines in intermittent use to be shut down in the intervening periods between work or throttled down to a minimum; • Drop heights of materials from lorries and other plant will be kept to a minimum; • Adherence to the codes of practice for construction working and piling given in BS 5228:2009+A1:2014 and the guidance given therein for minimising noise and vibration emissions from the site; • Provision of rest periods during any prolonged noisy activities; • Prohibition of the use of stereos and radios on site; • Compliance with the Councils preferred working hours of 07:30-18:00 Monday to Friday, 08:00-13:00 on Saturdays, with no working on Sundays or bank holidays; and • Keeping local residents informed and provision of a contact name and number for any queries or complaints. In particular, construction activity would need to be discussed with the occupants of the sensitive receptor, R3 (Quixotic Records), to minimise any disruption prior to any construction works.

Table 14.1: Summary of Proposed Mitigation and Enhancement	
Archaeology (Buried Heritage)	<p><u>Preservation by Record</u></p> <p>Following a written scheme of investigation, if any buried heritage is found, a geoarchaeological borehole survey and sub-surface deposit model would be undertaken to enable greater understanding of the nature of the underlying geology and topography, and any potential prehistoric landscapes.</p>
Daylight, Sunlight, Overshadowing and Solar Glare	None required.
Wind	<p><u>Site Hoarding</u></p> <p>Site hoarding will be present around the perimeter of the application site to mitigate wind speeds at ground level.</p>
Townscape and Visual	<p><u>Site Hoarding</u></p> <p>Site hoarding will be present around the perimeter of the application site to mitigate any adverse visual effects.</p>
Completed Development	
Socio-Economics	<p><u>Local Facility Financial Contributions</u></p> <p>As the new population will increase pressure on the local facilities in the local area, the Applicant should enter into discussions with the local authority and agree appropriate mitigation which is likely to include offering financial contributions towards the provision of educational facilities, healthcare services and local and youth open spaces.</p>
Transport	<p><u>Travel Plan</u></p> <p>A residential Travel Plan would aim to encourage public transport use, walking and cycling amongst occupants of the proposed development with the aim of reducing private car use.</p>
	<p><u>Car Park Management Plan</u></p> <p>This will set out the management and operation of the on-site parking provision. This would be in combination with a permit-free agreement.</p>
	<p><u>Delivery and Servicing Plan</u></p> <p>This will manage the arrival and departure of delivery and servicing vehicles and their activities when on-site.</p>
	<p><u>New Crossing Points and Pedestrian Environment</u></p> <p>There will be new crossing points and pedestrian environment enhancements on Anchor and Hope Lane, additional pedestrian/cycle links to Anchor and Hope Lane and the Thames Path, and high quality pedestrian environment within the application site to mitigate the effects of the proposed development on pedestrian movement and capacity, severance, pedestrian delay, pedestrian amenity and pedestrian fear and intimidation.</p>
	<p><u>Enhanced Cycle Environment</u></p> <p>There will be an enhanced cycle environment on Anchor and Hope Lane with additional pedestrian/cycle links to Anchor and Hope Lane and the Thames Path to mitigate the effects of the proposed development on cycle trips.</p>
	<p><u>Financial Contributions</u></p> <p>There will be financial contributions towards improving/enhancing bus service frequencies through the S106 Agreement to mitigate the effects of the proposed development on bus trips.</p>
Air Quality	None required.

Noise and Vibration	<u>Standard Attenuation and Acoustic Screening</u> All fixed plant installations will be fitted with standard attenuation and acoustic screening, as required to meet the noise emissions limits.
Archaeology (Buried Heritage)	None required.
Daylight, Sunlight, Overshadowing and Solar Glare	<u>Low Reflectivity Glass</u> Low reflectivity glass has been specified for the upper floors of Block B-West to reduce the effects of solar glare.
Wind	None required, as no mitigation is considered necessary past the design input.
Townscape and Visual	None required, as no mitigation is considered necessary past the design input.

Residual Effects

14.8 This section summarises the predicted residual effects of the proposed development following the adoption and inclusion of the mitigation and enhancement measures that are set out in Table 14.1.

14.9 Reference should be made to individual technical chapters (Chapters 6 – 12 and Volume 2) of the ES for a detailed description of residual effects.

Residual Effects during Demolition and Construction

14.10 Table 14.2 below summarises the residual effects which have been identified by the individual technical assessments as likely to arise as a result of the demolition and construction of the proposed development. Those effects ('Moderate' or 'Major') considered to be 'Significant' in the context of the EIA Regulations¹ are in bold. It should be noted that due to noise and vibration specific guidance, only 'Major' is considered to be 'Significant'.

Topic Area	Residual Effect	Significance of Effect	Adverse/ Beneficial/ Neutral	Duration of Effect
Socio-Economics	Generation of construction employment	Minor	Beneficial	Short-term
Transport	Effects of traffic flows from construction vehicle movements upon the local highway network	Moderate (beneficial) to Minor (adverse)	Beneficial / Adverse	Short-term
	Effects of construction activities on pedestrian movement and capacity, severance, delay, fear and	Negligible	N/A	Short-term

¹ HM Government. The Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations. London : HMSO, 2015. SI 2015/660.

Topic Area	Residual Effect	Significance of Effect	Adverse/ Beneficial/ Neutral	Duration of Effect
	intimidation, amenity			
	Effects of construction on cyclists	Negligible	N/A	Short-term
	Effects of increased number of public transport trips as a result of construction workers' travel	Negligible	N/A	Short-term
Air Quality	Dust Soiling and PM ₁₀ Health Effects	Negligible	N/A	Short-term
	NO ₂ and PM ₁₀ effects due to vehicle emissions	No Change to Negligible	N/A	Short-term
	Dust Soiling and PM ₁₀ Health Effects	Negligible	N/A	Short-term
Noise and Vibration	Construction Noise – Existing Sensitive Receptors	Negligible to Moderate	Adverse	Medium-term
	Construction Vibration – Existing Sensitive Receptors	Negligible to Minor	Adverse	Medium-term
	Construction Traffic – Existing Sensitive Receptors	Negligible to Minor	Adverse	Medium-term
	Construction Noise – New Sensitive Receptors	Negligible	N/A	Medium-term
	Construction Vibration – New Sensitive Receptors	Negligible	N/A	Medium-term
	Construction Traffic – New Sensitive Receptors	Negligible	N/A	Medium-term
Archaeology (Buried Heritage)	Asset locally removed by new piled foundations in relation to palaeoenvironmental remains within alluvial deposits	Negligible	N/A	Long-term
	Asset severely truncated by site strip, entirely removed within footprint of proposed basements, and locally removed by new piled foundations in relation to post-medieval industrial remains	Minor	Adverse	Long-term
	Asset severely truncated by site strip, entirely removed within footprint of proposed basements, and locally removed by new piled foundations in relation to post-medieval wetland	Minor	Adverse	Long-term

Table 14.2: Residual Effects during the Demolition and Construction Phase of the Proposed Development				
	management such as timber revetments and reclamation dumps			
	Asset locally removed by new piled foundations in relation to evidence of prehistoric wetland exploitation	Minor	Adverse	Long-term
Daylight, Sunlight, Overshadowing and Solar Glare	Daylight and Sunlight	Negligible	N/A	Long-term
	Overshadowing	Negligible	N/A	Long-term
	Solar Glare	Negligible	N/A	Long-term
Wind Microclimate	Increased windiness at ground level	Negligible	N/A	Short-term
Townscape and Visual	Impact on Views	Moderate	Adverse	Short-term
	Impact on Townscape Character Areas	Moderate to Negligible	Adverse	Short-term
	Impact on Heritage Assets	Minor	Adverse	Short-term

Residual Effects during Completed Development

14.11 Table 14.3 below summarises the residual effects which have been identified by the individual technical assessments as likely to arise as a result of the operation of the proposed development. Those effects ('Moderate' or 'Major') considered to be 'Significant' in the context of the EIA Regulations¹ are in bold. It should be noted that due to noise and vibration specific guidance, only 'Major' is considered to be 'Significant'.

Table 14.3: Residual Effects during the Completed Development Phase of the Proposed Development				
Topic Area	Residual Effect	Significance of Effect	Adverse/Beneficial/Neutral	Duration of Effect
Socio-Economics	Provision of new housing	Moderate (neighbourhood level) Minor (borough level)	Beneficial	Long-term
	Increased demand for primary education facilities	Negligible	N/A	Long-term
	Increased demand for secondary education facilities	Negligible	N/A	Long-term
	Increased demand for healthcare facilities	Negligible	N/A	Long-term
	Generation of operational employment	Negligible	N/A	Long-term

Table 14.3: Residual Effects during the Completed Development Phase of the Proposed Development				
	Provision of open space	Minor (neighbourhood level) Negligible (borough level)	Beneficial	Long-term
	Provision of playspace	Moderate	Beneficial	Long-term
	Improvements in site safety	Moderate	Beneficial	Long-term
Transport	Effects of the proposed development on pedestrian movement and capacity, severance, pedestrian delay, pedestrian amenity and pedestrian fear and intimidation	Negligible to Moderate	Beneficial	Long-term
	Effects of the proposed development cycle trips	Negligible	N/A	Long-term
	Effects of the proposed development bus trips	Negligible to Minor	Beneficial	Long-term
	Effects of the proposed development rail trips	Negligible	N/A	Long-term
	Effects of the proposed development traffic flows	Negligible to Minor	Adverse	Long-term
Air Quality	NO ₂ and PM ₁₀ effects due to emissions	No Change to Negligible	N/A	Long-term
	NO ₂ and PM ₁₀ effects due to vehicle emissions and site suitability	Negligible	N/A	Long-term
Noise and Vibration	Operational Noise	Negligible	Adverse	Long-term
	Changes in Traffic Noise	Negligible to Minor	Adverse	Long-term
Archaeology (Buried Heritage)	N/A			
Daylight, Sunlight, Overshadowing and Solar Glare	Daylight to surrounding receptors	Negligible to Major	Adverse	Long-term
	Sunlight to surrounding receptors	Negligible to Minor	Adverse	Long-term
	Overshadowing (external amenity areas)	Negligible	N/A	Long-term
	Overshadowing (internal amenity areas)	Minor	Adverse	Long-term
	Solar Glare	Negligible to Minor	Adverse	Long-term
Wind Microclimate	Sitting use to leisure walking	Negligible to Moderate	Beneficial	Long-term

Table 14.3: Residual Effects during the Completed Development Phase of the Proposed Development				
	Sitting use to standing/entrance use	Negligible to Minor	Beneficial	Long-term
	Sitting use to standing/entrance (at active amenity spaces)	Negligible	N/A	Long-term
	Sitting use to standing/entrance use in summer	Negligible	N/A	Long-term
	Sitting use and standing entrance use (probe location 166) in summer	Negligible	N/A	Long-term
	Sitting in summer	Negligible	N/A	Long-term
Townscape and Visual	Impact on View – Views 1, 4-9, 18-20	Moderate	Beneficial	Long-term
	Impact on View – View 2	Moderate	Adverse	Long-term
	Impact on View – View 3	Minor to Moderate	Adverse	Long-term
	Impact on View – Views 10-12, 15, 21	Minor to Moderate	Beneficial	Long-term
	Impact on View – Views 13, 14, 16	Minor/Negligible/No Effect	Neutral	Long-term
	Impact on View – View 17	Minor	Beneficial	Long-term
	Impact on Townscape Character Areas – Charlton Riverside and Residential Charlton	Moderate	Beneficial	Long-term
	Impact on Townscape Character Areas – Charlton Village	Negligible to Minor	Neutral	Long-term
Impact on Heritage Assets	Negligible to Moderate	Neutral	Long-term	

Completed Development

- 14.14 25 effects of 'Moderate' or above significance have been identified during the operational phase of the proposed development, of which 22 are beneficial. The remaining residual operational effects are considered to be not significant.
- 14.15 The most likely significant beneficial environmental effects identified for the proposed development once it is completed and operational are those relating to the socio-economic, transport, wind and townscape and visual components. These effects include increase in housing stock, improved pedestrian movement and capacity, improved wind conditions and improved views of the townscape.
- 14.16 The three likely significant adverse environmental effects identified for the proposed development once it is completed relate to daylight and townscape and visual effects. The majority of the existing residential receptors in the area would only have their daylight affected slightly by the proposed development. However, a small amount residents will experience significant adverse effects in terms of daylight. The views from the closest existing residential receptors (views 2 and 3) would also be considered as being affected significantly.

Conclusion

- 14.17 Overall, the EIA process has demonstrated that likely significant environmental adverse effects are limited to specific neighbouring residential properties lacking daylight and experiencing negative views during the operation of the proposed development. This is to be expected with a scheme of such significant scale. In addition, it is likely that there will be some significant adverse environmental effects in relation to views during construction which are also to be expected, however these would be only of a temporary nature. There are no other significant adverse effects predicted by socio-economics, transport, air quality, noise and vibration, archaeology (cultural heritage) or wind.
- 14.18 There are a number of significant environmental beneficial effects associated with the proposed development in relation to socio-economics. These comprise provision of new housing, the provision of playspace, and the improvements in site safety. In addition, there will be significant beneficial effects in relation to improved pedestrian movement and capacity, improved wind conditions and improved views of the application site. Furthermore, during construction there will be significant beneficial effects in relation to traffic flows from construction vehicle movements upon the local highway network.
- 14.19 The proposed development will bring forward high quality residential units with ancillary residential facilities and associated public and private open space. The commercial and leisure space will generate local employment and community facilities will benefit the local residents. In addition, the proposed development will improve the existing highway network and public realm which will benefit the wider local area.

Summary of Likely Significant Environmental Effects

Demolition and Construction

- 14.12 Likely significant adverse effects have been identified during the demolition and construction phase of the proposed development relating to the impact on two townscape views. Likely significant beneficial effects have been identified in relation to 14 townscape views, as well as in relation to the local highway network. The remaining residual construction effects are considered to be not significant.
- 14.13 It should be noted that the construction phase effects are generally short-term in nature and typically temporary. In addition, there are no 'Major' adverse effects identified over the course of the demolition and construction phase. For development to take place these effects are unavoidable, and as previously noted are short-term and temporary in nature.